

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Applicants respectfully request that the foregoing amendments be entered.

New dependent claim 14 has been added. Support for claim 14 can be found at least on page 11, lines 12-18 of the specification. Claims 1-10 and 14 are pending.

Claim objections

Claims 5 and 10 were objected to because the claims contain the negative limitation “the light from the light source is not effectively used when a predetermined light distribution pattern for a low beam is formed.” In support for this objection, the Examiner cites to MPEP § 2173.05(i). Applicants submit that the citation to MPEP § 2173.05(i) does not support the Examiner’s objection to claims 5 and 10 in the present case. As stated in MPEP § 2173.05(i), “So long as the boundaries of the patent protection sought are set forth definitely, albeit negatively, the claim complies with the requirements of 35 U.S.C. 112, second paragraph.” In the present case, the language “the light from the light source is not effectively used when a predetermined light distribution pattern for a low beam is formed” is clear.

Moreover, written description support for the limitation of “the light from the light source is not effectively used when a predetermined light distribution pattern for a low beam is formed” can be found at least in original claims 5 and 10, and in the present specification at least in the bridging paragraph on pages 17-18, and in the paragraph on page 18, lines 3-10.

Accordingly, applicants respectfully request that the objection to claims 5 and 10 be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1-3 and 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,697,225 to Lindae et al. (“Lindae”). Claims 4-5 and 9-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lindae, and further in view of

U.S. Patent No. 4,972,307 to Takatsuji et al. ("Takatsuji"). Applicants respectfully traverse these rejections for at least the following reasons.

Independent claims 1 and 6 each recite that "the reflection surface includes a plurality of segments, and is formed of a free-form surface obtained by deforming a reference ellipsoid of revolution." (emphasis added). Lindae and Takatsuji fail to disclose or suggest at least this feature of claim 1, or the advantages thereof.

Lindae does not disclose the reflection surface as recited in claims 1 and 6, formed of a free-form surface obtained by deforming a reference ellipsoid of revolution. The section of Lindae cited as disclosing a reflection surface that is formed by deforming a reference ellipsoid of revolution, col. 1, lines 48-63, merely discloses that portions (upper right hand wall portion and lower left hand wall portion) of its reflector are for a paraboloid-ellipsoid sector. Thus, Lindae merely discloses a reflector which includes portions that are paraboloid-ellipsoid in shape, but does not suggest that these portions are formed of a free-form surface obtained by deforming a reference ellipsoid of revolution. Thus, Lindae fails to disclose the reflection surface as recited in claims 1 and 6.

The Office Action on pages 2-3 states "It is clear that the reflector (7) of Lindae et al. includes portions (11-16) which are asymmetrical in shape (free-form) surfaces." Assuming arguendo that free-form is merely an asymmetric shape, and that Lindae discloses a reflector with an asymmetric shape, Lindae still does not disclose the reflection surface as recited in claims 1 and 7, because Lindae discloses only a reflector with portions that are paraboloid-ellipsoid in shape, and does not suggest deforming a reference ellipsoid of revolution.

Takatsuji was cited for allegedly disclosing a headlamp with a diffuse reflection surface, but fails to cure the deficiencies of Lindae.

Moreover, the headlamps of claims 1 and 6, with their specifically recited reflection surfaces, would not have been obvious in view of Lindae. Lindae not only does not disclose

or suggest a reflection surface formed of a free-form surface obtained by deforming a reference ellipsoid of revolution, Lindae provides no guidance as how to proceed in deforming a reference ellipsoid of revolution in order to arrive at a reflectance surface having the properties as recited in claims 1 and 6, nor does Lindae suggest that deforming its reflection surface would be beneficial for its reflector.

The Office Action on page 3 states “It would have been obvious to one of ordinary skill in the art at the time of the invention to use enlarging (stretching) in horizontal direction while crushing (pushing) in vertical (orthogonal) direction to form an asymmetric free-form surface through a simple deformation process which requires a very low manufacturing cost.” Even if the deformation process requires a very low manufacturing cost, however, the Office Action provides no suggestion, nor does Lindae, as to why one skilled in the art would wish to deform the reflection surfaces of the Lindae device. To the contrary, such a deformation would change the intended reflection function of the Lindae device, and one skilled in the art would not have made such a modification.

Moreover, claims 1 and 6 are directed to a projector type vehicle headlamp, and a reflector for a projector type vehicle headlamp, respectively. Lindae and Takatsuji, by contrast, are not related to projector type vehicle headlamps.

Independent claims 2 and 7 contain all the limitations of independent claims 1 and 6, respectively, and thus are patentable for analogous reasons. Moreover, both claims 2 and 7 recite “a first continuous segment that forms diffused light at a center portion of the light distribution pattern; a second continuous segment that forms spot light at the center portion.” Lindae fails to suggest this feature of claims 2 and 7. The Office Action equates portions 15 or 16 of Lindae with the first continuous segment as recited, and portions 11 or 12 of Lindae with the second continuous segment as recited. In contrast to the first continuous segment of claims 2 and 7, however, portions 15 and 16 of Lindae generate light beams 25, 26 forming a spot of light, and they do not form diffused light at a portion of the light pattern.

The dependent claims are patentable for at least the same reasons as their respective independent claims, as well as for further patentable features recited therein. For example, claims 5 and 10 recite “a portion of the diffuse reflection surface, where the light from the light source is not effectively used when a predetermined light distribution pattern for a low beam is formed, includes a luminous intensity-improving reflection surface that increases luminous intensity at the one end and the other end portions formed substantially in a rectangular shape by the wide area-illuminating reflection surface” (emphasis added), a feature not suggested by the Lindae and Takatsuji in the context of those claims.

The Office Action states on pages 3-4 with respect to claims 5 and 10 that applicant’s arguments are based on (a) a negative limitation which is not given any patentable weight and (b) a functional statement “a luminous intensity-improving reflection surface that increases luminous intensity” which is not given any patentable weight. Applicants submit, however, that the Patent Office can not properly ignore the negative limitation in claims 5 and 10, but must give weight to all of the limitations of the claims.

Moreover, the limitation “a luminous intensity-improving reflection surface that increases luminous intensity” does provide structural limitations to claims 5 and 10 when taken in context of those claims, and thus can not be ignored for the purposes of patentability. Claims 5 and 10 recite this limitation in the overall context of “a portion of the diffuse reflection surface, where the light from the light source is not effectively used when a predetermined light distribution pattern for a low beam is formed, includes a luminous intensity-improving reflection surface that increases luminous intensity at the one end and the other end portions formed substantially in a rectangular shape by the wide area-illuminating reflection surface.” When taken in the context of the light from the light source and other structural limitations provided in the last clause of claims 5 and 10, the limitation “a luminous intensity-improving reflection surface that increases luminous intensity” does provide structural limitations which may not properly be ignored by the Patent Office.

As another example, in new dependent claim 14 the reflection surface has a second focal point. Lindae and Takatsuji fail to suggest this feature of claim 14. With the structure of claim 14, light from the light source travels to the reflector which reflects the light such

that the light is converged at the second focal point, and the light then travels to the condenser lens that directs the reflected light forward. By contrast in the Lindae and Takatsuji systems, light from a light source travels to a reflector, and the light reflected from the surface of the reflector irradiates objects directly without passing through a second focal point.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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